Strong Quadrangle, Maine

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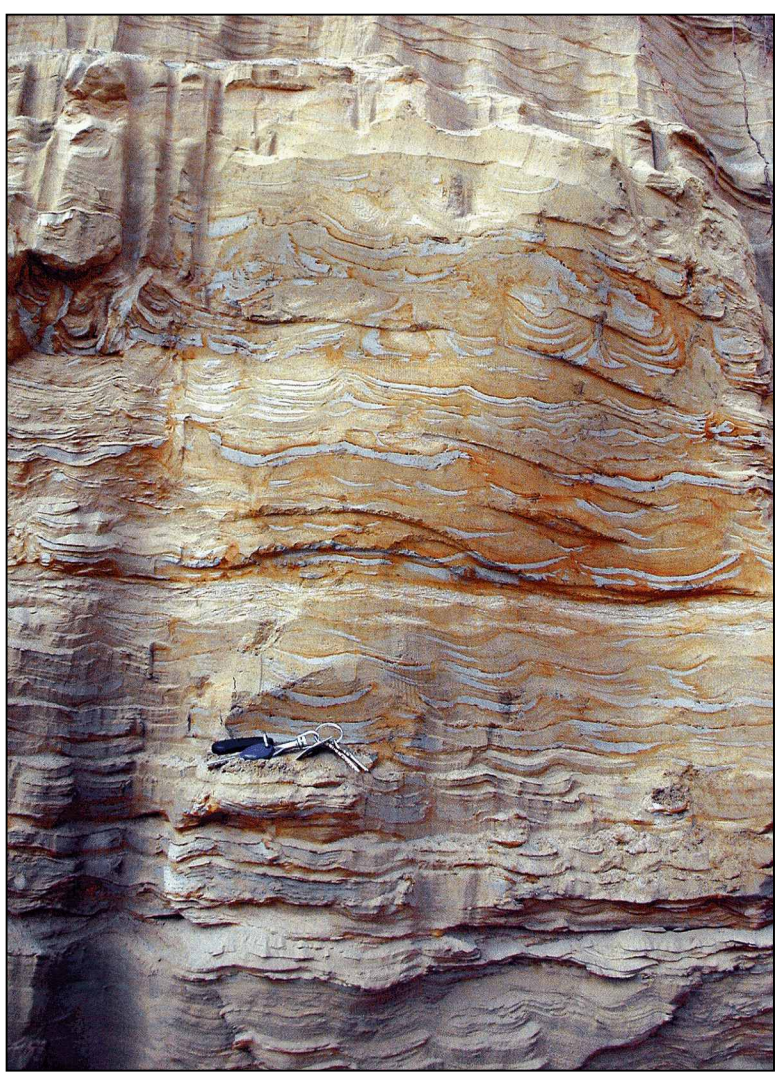

Figure 1: Glacial lake sediments deposited in an ice-dammed lake in the Valley Brook valley, Freeman. Climbing ripple-drift cross-lamination is represented in fine sand and silt drapes in the section to the right of the keys. This lamination in sedimentary structure forms when the fine-grained sediment flows into a lake as a density current. When the density current travels into lower velocity zones, deposition of sediment from suspension occurs. The ripples and drapes in the upper half of the photo are deformed by loading of the deposit by overlying sediment and by dewatering of the deposit by the escape of water from the sediment. At the top of the photo, trough cross-stratified sand is found overlying the deformed layers.

Figure 2: A. Crudely-bedded, poorly-sorted cobble gravel glacial-fluvial outwash deposit in Valley Brook valley, Freeman-Strong town line. The sediment in this deposit has not been transported far from its source, hence the wide range of sizes of individual gravel and cobble stones.
B. Closeup of bullet-shaped, striated till stone. The till stone is clast in the outwash deposit in photo A, in which the degree of sorting is poor. The striated stone and poor sorting indicates that the gravel has not been reworked by later fluvial processes.

Figure 3: Coarse-grained cobble-pebble gravel: poorly sorted and showing three crudely differentiated units, Strong village. The first unit above the folding shovel (1) is pebble gravel with weak sub-horizontal and shallow-angle bedding. The second or middle unit (2) is cobble-pebble gravel with imbricated clasts dipping from upper left to lower right. Alternatively, the dipping clasts may represent crude trough cross-bedding in the unit. The third and uppermost unit (3) may be the middle unit lacking the apparent clast imbrication, possibly due to frost action in the upper unit. However, the upper unit appears to have fewer large cobbles than the middle unit, and thus may be a separate deposit. All three units represent deposits by a braided stream in flood conditions, with flow direction from right to left.

Figure 4: Coarse-grained, crudely cross-bedded cobble-pebble gravel overlying fine-medium grained sand. The sand body is cut out by the overlying coarse unit in the center of the photo near the shovel head. The coarse gravel in turn overlies a poorly sorted gravel found in the lee of a large boulder at right center of photo. The sand represents the slackwater phase of a flooding braided river, whereas the coarse gravel represents full flood conditions when all material in the stream bed is moving. View is to north; flow direction is toward observer.

Figure 5: Prominent glacial grooves on outcrop surface; shovel oriented parallel to groove bearing 125°, Rt. 4 west of Strong village. Grooves such as these are usually thought to have formed by glacial erosion from debris in the ice. However, the scalloped features on the bedrock surface at the bottom of the photo are believed to have formed beneath the glacier by sculpting due to sediment-charged meltwater. Although the grooves are near parallel to one another and do not vary along trend, they also may have been formed by meltwater erosion.

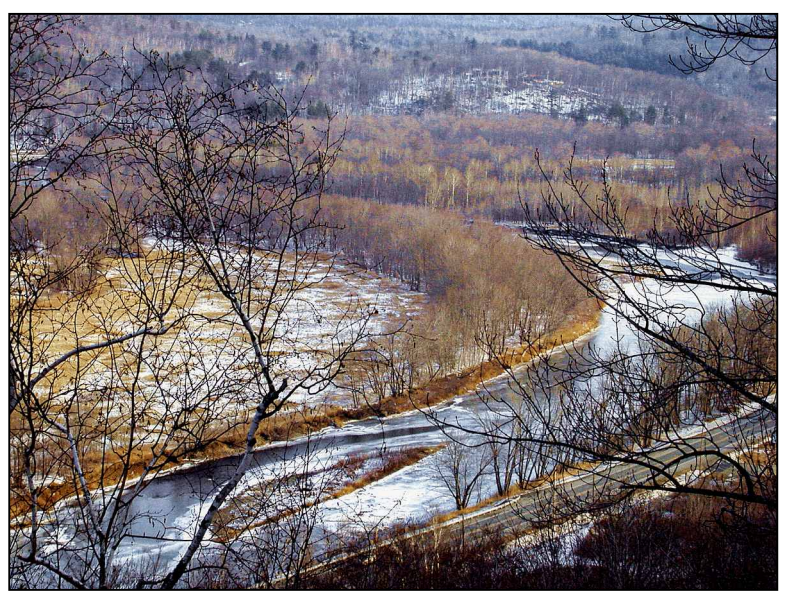

Figure 6: Flood plain of the Sandy River, South Strong, at a site known locally as the Devil's Elbow. Fine-grained sediment deposited during floods forms the floor of the valley and overlies deposits of glacial origin. The proximity of the river to the road during flooding is a geologic hazard, as is bank erosion due to the meandering of the Sandy River over time.

Figure 7 : A. Glacial marine deposits of unknown origin, South Strong. Although not containing marine fossils, these deposits of fine sand and silt are considered glacial marine because they are found at an elevation below the limit of marine flooding of the area during the deglaciation. Also, approximately 0.5 miles to the south on Route 4, an exposure of marine clay-silt overlain by fluvial sand is found in a driveway cut west of the road. (See surficial materials map for location). Finally, while not definitive, the sediments lack the climbing ripple-drift cross-lamination commonly found in lake sediments but rare in marine deposits (compare with Figure 1). The photo shows an exposure of deformed layers above the shovel, overlain by undeformed near horizontally bedded sand and silt with a zone of deformed beds within the undeformed section. Above this hillside cut, fluvial stream terrace deposits mantle the marine sediments. B. Closeup of deformed beds overlain and underlain by undeformed horizontally bedded fine sand and silt. C. Closeup of deformed beds at base of section.